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REMARKS:Status

After this response, claims 1 to 18, 20 to 27, 29 and 30 are pending. Claims 1, 2, 4, 5, 7, 10, 11, 13, 14, 16, 20, 21, and 23 to 27 have been amended, claims 19 and 28 have been cancelled, and claims 29 and 30 have been added. Claims 1, 10 and 20 are the independent claims. Reconsideration and further examination are respectfully requested.

Section 112 Rejections

Claims 7 and 20 to 27 were rejected under 35 U.S.C. § 112, ¶ 2, as being indefinite. Applicant has amended the claims to address the issues raised in the § 112 rejection, withdrawal of which is respectfully requested.

Section 102 Rejection

Claim 19 was rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Pub. No. 2002/0194248 (Wood). Applicant has cancelled this claim without prejudice or disclaimer of subject matter, rendering this rejection moot. Accordingly, withdrawal of the rejection is respectfully requested.

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Section 103 Rejections

Claims 1 to 3, 7, 10 to 12, 16, 20 to 22, 25 and 28 were rejected under 35 U.S.C. § 103(a) over Wood. Claims 4 to 6, 13 to 15, 23 and 24 were rejected under § 103(a) over Wood in view of EP 1 172 738 A2 (Bhatti). These claims are discussed below, grouped by independent claim.

Claims 1 to 9 and 29: Independent claim 1 is reproduced below as amended:

1. A method of doing business including the steps of:  
receiving at least one job to be processed from at least one customer;  
estimating a time for completion of processing for said at least one job to be processed;  
querying if said at least one customer is willing to accept a tolerance time that includes a time for completion that is later than the estimated time for completion;  
placing each of said at least one job to be processed in a queue of jobs to be processed;  
sorting said queue of jobs to be processed;  
configuring dynamically the size of at least one cluster of processing resources from a pool of processing resources responsive to at least one attribute of said job to be processed;  
processing said at least one job to be processed from said queue of jobs to be processed by assigning said at least one job to be processed to said at least one cluster of processing resources; and  
making a result of said processing of said at least one job to be processed available to said at least one customer;  
wherein said step of configuring is responsive to a result of said step of querying.

The applied art, alone or in combination, is not seen to disclose or to suggest the foregoing features of claim 1, at least with respect to "querying if said at least one customer is willing to accept a tolerance time that includes a time for completion that is later than the estimated

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time for completion" and "wherein said step of configuring is responsive to a result of said step of querying."

The invention is directed toward facilitation of clustered processing. One important target for the invention is a rendering farm for smaller animation groups or students of film animation. (Of course, the invention is not limited to use by such groups.) These groups often must balance time demands with expenses. By querying whether or not a customer is willing to accept a tolerance time as claimed, possibly with the incentive of a fee discount, the invention provides flexibility to such customers.

Turning to the applied art, the Office Action noted that "Woods did not clearly disclose the tolerance time... ." Bhatti was cited for teaching the tolerance time.

Bhatti uses a characterization module 45 to determine a corresponding user tolerance level "by assigning a predetermined tolerance threshold to the level." Bhatti teaches that "[t]he predetermined tolerance threshold for each service level can be arbitrarily set, or based on scientific survey study of the users." Bhatti, para. [0041]. Bhatti's characterization module 45 "assigns a user tolerance threshold to a user request based on the session duration of that user request." Bhatti, para. [0042].

Bhatti's predetermined tolerance threshold and session duration are not results of querying a customer for a job that is being processed. Thus, Bhatti does not teach actually querying a customer to determine acceptability of a tolerance threshold or time for a job, as recited by claim 1.

Furthermore, Bhatti is not concerned with cluster processing. Rather, Bhatti is concerned with handling web server latency when responding to user requests. Applicant does not

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see anything in either Wood or Bhatti that suggests application of handling web server latency to cluster processing. Thus, Applicant submits that even if Bhatti taught querying a user to determine acceptability of a tolerance threshold, the combination of Wood and Bhatti still would not teach claim 1's feature that "said step of configuring [dynamically the size of at least one cluster of processing resources] is responsive to a result of said step of querying."

In view of the foregoing, claim 1 as amended is believed to be allowable over the applied art.

Certain of the claims that depend from claim 1 are also discussed below.

Claim 4 recites that "said step of querying includes offering a fee discount to said at least one customer for said tolerance time." Neither Wood nor Bhatti discusses any type of fee discount. Accordingly, claim 4 is believed to be allowable over Wood and Bhatti for this additional reason.

New claim 29 recites that "said step of configuring dynamically the size of at least one cluster of processing resources further comprises soft rebooting said cluster of processing resources."

One benefit of soft rebooting is to provide separation between subsequent jobs. If some processing resources are assigned to a first party's job and then to a second party's job, a soft reboot helps to ensure that the second party's job is not affect by the first party's job. This type of separation can be important when clusters are reassigned among jobs for different entities. Providing such capability enhances the invention's applicability to some environments, for example rendering farms for smaller animation groups or students of film animation.

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In the rejection of claim 7, the Office Action cited Wood (page 3, para. [0029] and [0030]) as teaching soft rebooting of a cluster of processing resources. As stated in the Office Action, this portion of Wood deals with allocating nodes to a job. However, allocating and rebooting are different from each other. Applicant submits that allocation does not necessarily provide the same separation between jobs as soft rebooting.

Neither Wood nor Bhatti is seen by Applicant to discuss soft rebooting of a cluster of processing elements as recited by claim 29. In fact, the term "reboot" or the like does not appear to even be present in either of these references. Accordingly, claim 4 is believed to be allowable over Wood and Bhatti for this additional reason.

In view of the foregoing amendments and remarks, reconsideration and withdrawal are respectfully requested of the § 103 rejections of claim 1 and its dependent claims. Allowance of these claims is respectfully requested.

Claims 10 to 18 and 30: These claims recite means for performing the steps of claims 1 to 9 and 29. Accordingly, reconsideration and allowance also are respectfully requested of claims 10 to 18 and 30.

Claims 20 to 27: Independent claim 20 is reproduced below as amended:

20. A system including  
a request receiver element configured to receive at least one job to be processed from at least one customer, said request receiver element in communication with a pool of processing resources;  
a querying element configured to query if said at least one customer is willing to accept a tolerance time that includes a time for completion of said at least one job to be processed that is later than an estimated time for completion of said at least one job to be processed;

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a queue of jobs to be processed and disposed to being sorted according to a priority assigned to each of said at least one job to be processed, said queue of jobs to be processed being in communication with said pool of processing resources; and

said pool of processing resources configured to run at least one job to be processed, said pool of processing resources and disposed to being dynamically divided into clusters of processing resources which may run in parallel;

wherein sorting of said queue of jobs is responsive to a result of the querying by said querying element.

Substantially as discussed above, the applied art does not teach the features of “query[ing] if said at least one customer is willing to accept a tolerance time that includes a time for completion of said at least one job to be processed that is later than an estimated time for completion of said at least one job to be processed” and of “wherein sorting of said queue of jobs is responsive to a result of the querying by said querying element.” Thus, claim 20 also is believed to be allowable over the applied art. (The above discussion of claim 1 addresses configuring instead of sorting; however, substantially the same argument applies.)

Applicant notes that claim 23 recites a fee discount and claim 25 recites a rebooting element disposed to soft reboot a cluster of processing resources. As discussed above with respect to claims 4 and 7, the applied art is not seen by Applicant to teach these features. Accordingly, claim 23 and 25 are believed to be allowable over Wood and Bhatti for these additional reasons.

In view of the foregoing amendments and remarks, reconsideration and withdrawal are respectfully requested of the § 103 rejections of claim 20 and its dependent claims. Allowance of these claims also is respectfully requested.

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Claim 28: This independent claim has been cancelled without prejudice or disclaimer of subject matter, rendering the rejection thereof moot.

No Admission

Applicant's decision not to argue each of the dependent claims separately is not an admission that the subject matter of those claims is taught by the applied art.

Closing

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney can be reached at (614) 205-3241. All correspondence should continue to be directed to the address indicated below.

Respectfully submitted,



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